Remarks/Arguments

This is intended to be a complete response to the Official Action mailed November 16, 2006 in which claims 1-2 were rejected. Claims 1 and 2 have been amended herein. No new matter is added and the scope of the claims has not been broadened thus no new search of the art is required.

Rejection under §101

Claims 1-2 stand rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. "Claims 1-2 are drawn to an alpha 2-antiplasmin protein, which reads on a product of nature. The claims should be amended to indicate the hand of the inventor, for example the insertion of "isolated" or "purified" in connection with the protein to identify a product not found in nature (see MPEP 2105)."

Claims 1 and 2 have been amended to indicate the claimed enzyme is "purified", thereby mooting the rejection. Applicants apologize for the unintentional absence of the indicated amended claims. Reconsideration and withdrawal of the rejection under §101 is requested.

Rejection under §102

Claim 1 stands rejected under 35 U.S.C. 102(b) as being anticipated by Ludwig Institute For Cancer Research (WO 97/34927, 28 September 1997).

"The reference discloses a sequence that is identical to the claimed SEQ ID NO:1 (N-terminus) and SEQ ID NO:4 (internal sequence) with a 100% sequence identity. In addition, the reference discloses a dimeric form of the claimed protein."

Applicants respectfully traverse. Although the protein identified in WO

97/34927 includes sequences that are identical with the sequence of the enzyme claimed herein, the proteins are not identical.

First, in the presently claimed enzyme (α_2-antiplasmin cleaving enzyme), isoleucine is the N-terminal amino acid and SEQ ID NO:1 is the N-terminal sequence. In FAPα, there is 23 amino acid sequence (Met(1) - Cys(23)) which comprises the N-terminal amino acid sequence of the protein (see wo 97/34927- cited by the examiner), wherein the N-terminal amino acid is methionine. The proteins thus are not identical. The N-terminal portion of the presently claimed protein is thus distinctly different from the N-terminal portion of the FAPα protein.

Second, the presently claimed protein (α_2-antiplasmin cleaving enzyme) possesses enzymatic activity (cleavage of precursor α_2-antiplasmin at the pro12-asn13 bond) which is not possessed by the fibroblast activation protein alpha (FAPα) of the '927 reference. Contrary to the examiner's assertion, all of the limitations of the claim are not met by the reference since APCE and FAPα do not possess the same enzymatic activity.

Third, in the publication by Schmidt et al., previously provided in the Response filed August 18, 2006, it is explicityly stated (p. 1730, col. 2) that:

"FAP is a locally expressed membrane molecule with no detectable soluble cleavage products in the circulation, favording enrichment of targeted substances at the tumor site." (Emphasis added).

Thus, while the presently-claimed APCE protein may be a cleavage product of FAPα with the membrane-binding portion cleaved therefrom, the conventional wisdom in the art as expressed by Schmidt et al., prior to the present invention, is that no soluble cleavage product of FAPα exists. The prior art thus teaches away from the present invention.

In summary, (1) FAPα has a different N-terminal amino acid and N-terminal portion from APCE, (2)FAPα does not possess the same antiplamin cleaveage activity as APCE, and (3) the prior art asserted that a soluble cleavage product of FAPα does not exist. For all of these reasons, the present claims are not anticipated under §102, nor obvious under §103, over the Ludwig reference.

In view of the above, applicants respectfully request reconsideration and withdrawal of the rejection under 35 USC §102(b).

Conclusion

In view of the above, Applicants respectfully submits that the claims are now in a condition for allowance and requests issuance of a Notice of Allowance therefor.

Respectfully submitted,

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